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THE UNIONIDÆ OF SPOON RIVER, FULTON COUNTY, ILLINOIS.

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This report or review of the Unionidæ of Fulton County, Illinois, is based mainly on researches made on Spoon River, a tributary of the Illinois and at a point about twenty miles from its mouth. It is a sinuous, winding stream, something over 100 miles long and with a width varying from 100 to 150 feet. The valley through which it courses averages about one mile in width. In many places cultivated fields come up to the very banks of the stream, and then alternate with strips of timber, or a fringe four or five rods wide of willow, silver maple or elm, is left by the thrifty farmer to protect and hold the banks. Occasionally a great white-armed sycamore is still to be seen, a veritable giant left standing as a memento of the great forest that once filled all this beautiful valley.

The bed and banks of the stream present a variety of conditions suitable to the tastes and habits of a large number of the Unionidæ.

Deposits of black mud, or of mud and clay, sand-banks, and long stretches of rocky or pebbly bottom covered with a sufficient deposit of mud and sand to afford a burrowing place for the molluscs of the river.

The river is a clear-running spring-fed stream, with but little iron, lime or other corroding substances to damage or disfigure the shells; consequently they grow to a size and attain a beauty of markings and coloration not often excelled in the same species found in other water courses.

My observations have for the most part been confined to a part of the stream lying within four or five miles above and below the village of Bernadotte, and at such odd times and moments as a busy practitioner could spare from a large country practice. Provided with a bag or basket, and attired in gum boots reaching to the hips, a hurried run would be

¹Bernadotte, Ill.

made to the beds of mussels a half mile or more above or below the mill-dam and in an hour's time a bushel or two of specimens would be taken, the collection perhaps representing fifteen to twenty species.

Unio rectus Lamarck.

Not abundant, and fine young shells not often found; both the white and purple nacre specimens are found. Shells seven to seven and a half inches in length are met with.

U. gibbosus Barnes.

Adult shells are common at a locality a mile below the village. Young uneroded specimens harder to obtain, nacre both liver colored and white and occasionally one is found with the shadings beautifully intermingled in the central parts, and with a marginal band of deep purple.

U. anodontoides Lea.

Common; found everywhere associated in small groups or singly. Not a hundred yards of bank can anywhere be found, where there is not more or less of the younger shells, which have been carried out by the muskrats or minks and from which a meal has been obtained from their juicy contents.

It would be interesting to know why Lea gave this handsome species its peculiar name, for it is as unlike an *Anodonta* as it well could be. The large old specimens are a rich horn color, while younger shells are almost white, and some beautifully rayed with greenish lines. These three allied species maintain characteristics and markings entirely distinct from each other.

U. plicata LeSueur.

Very numerous; wagon loads of them are taken out every season by fishermen to bait trout lines; bushels of them are carried away, and after the epidermis is removed by ashes water, they are utilized in the cemeteries for grave decorations; they are also much used as an edging to flower beds, and walks. A score of years ago, rings made of this shell were in considerable demand and some village geniuses worked up quite a paying industry in their manufacture. A piece of the shell would be worked down by grinding, and the use of drills,

round files, etc., a bit of the sky-tinted edge would be worked into a set, and this would sometimes be further enriched by the addition of a silver moon and stars, making a very pretty and unique ornament that would readily bring the maker one or two dollars.

U. multiplicatus Lea.

This species seems to me to be identical with *U. undulatus* Barnes, and *U. heros* Say. It is not common in Spoon river, but grows to an extraordinary size. Specimens have been taken eight and a half inches long, and weighing several pounds. It is indeed a hero in size.

U. ligamentinus Lamarek.

A numerous species, and growing very large; nacre always a pearly white in this locality. Some shells received from Wisconsin show a pink-tinted nacre. From a shell of this Unio, I took a year ago, one of the finest pearls that I have ever seen, a perfect oval, as large as a small white bean.

U. occidens Lea.

Quite common, and the handsomest Unio in Illinois; no two are alike, there being as great a variety in their markings as there are shells. About one in ten is of the rare pink variety, as beautiful as any sea-shell. The *occidens* like the *anodontoides* is a great traveler, and I have tracked them for hundreds of feet in shallow water before coming up to them.

U. ventricosus Barnes.

This species is probably a synonym of the preceding, at any rate if they are two distinct species they shade so interminably into each other that I do not know where to draw the line separating them. The large *U. ventricosus* is probably the male of *occidens*.

U. capax Green.

Several specimens that I have sent out as *occidens*, have been pronounced by competent conchologists as the above species. But as yet I doubt the correctness of their diagnosis and do not believe the true *capax* is to be found in Spoon river.

U. luteolus Lamarek.

This almost universally distributed species, is not without its representation in the rivers of Illinois.

U. tuberculatus Barnes.

Very common and fine; growing to a length of six and a half to seven inches. A characteristic species, totally unlike any other *Unio*. Found in many parts of the United States, and in all waters and localities maintaining its distinct individuality. In northern waters, nacre white. In the far south a few specimens are found in which it is purple.

U. alatus Say.

Not numerous, but found sparingly all along the river. One was found two years ago, nine inches long.

U. lævissimus Lea.

Very plentiful and fine; a beautiful glossy epidermis and purple nacre.

U. gracilis Barnes.

Quite common in certain localities; grows quite large, but the older shells show much erosion and are apt to be indented or otherwise injured. This *Unio* and the two preceding it, are a family group, and present many characteristics in common.

U. verrucosus Barnes.

Not common, but a few fine large ones are found, always presenting the peculiar liver colored nacre of this species. The young ones I have not yet met with. Have received this shell from Iowa under the name of *U. graniferus* Lea.

U. pustulosus Lea.

One of the most numerous of all the unios found in Illinois. In Spoon river all sizes from the small young shells to the largest adults are easily found.

U. pustulotus Lea.

Not so common as the preceding but distinguished from it by the lesser number and larger size of the pustule.

U. lacrymosus Lea. Synonym *asperimus* Lea.

Plentiful, and beautifully marked; does not grow so large in Spoon river, as in the rivers of Indiana; some shells

received from White river being fully twice as large as any found in Illinois.

U. fragosus Conrad.

Not common. It is closely allied to *U. lacrymosus* Lea.

U. metanever Rafinesque.

Not uncommon in some localities and a characteristic species.

U. cornutus Barnes.

A unique species. I know of no locality in Illinois where it can be found in abundance. After a season's searching on the "Spoon" I am not rewarded with over twelve or fifteen, but these present such a variety of coloring of from green to red, and so odd in character with their knob or horn-like projections that each find is welcomed as a prize.

U. ebeneus Lea.

A few found in the Spoon; more common in the Illinois near Pekin.

U. elegans Lea.

This fine shell does not belie its name; it is truly an elegant Unio; found associated with the next species to which it is related.

U. donaciformis Lea. Synonym *zigzag* Lea.

Far more common than the elegant. A very handsome pink variety is found in Spoon river.

U. trigonus Lea.

A very common mollusc found everywhere on the Spoon; easily distinguished by its velvety epidermis and the red meat of the animal.

U. obliquus Lamarck.

Rare.

U. orbiculatus Hild.

A few found. A doubtful species.

U. parvus Barnes.

Common above the dam in deep water.

U. ellipsis Lea.

Rare.

U. solidus Lea.

Rare.

U. subovatus Lea.

Not common.

U. wardii Lea.

Not common.

Margaritana complanata Barnes.

Quite common, and the largest *Margaritana*.

M. rugosa Barnes.

Common, large and fine ; salmon colored nacre.

M. marginata Say.

A few found in the Spoon.

M. hildrethiana Lea.

Have found them only in one locality on the Spoon. A half mile below the village of Bernadotte where a great ledge of rocks, juts out over the river ; here at low tide the muskrats carry them to the flat top of a rock ; and in no other place have I been able to find them.

M. calceola Lea.

A few in the Spoon, more common in the Illinois.

M. confragosa Say.

Rare.

Anodonta grandis Say.

Truly a grand species ; specimens six to seven inches long have been taken. More common above the dam in deep water.

A. decora Lea.

More common in the Spoon than the preceding, and much more fragile.

A. plana Lea.

A fine shell ; groups with the preceding, but much less common.

A. edentula Say.

Many in Spoon river, quite variable in coloration.

A. imbecilis Say.

Common near the "Big Rocks" a half mile down the river. Not so large as specimens received from other localities, but epidermis a more brilliant green.

A. corpulenta Cooper.*A. suborbiculata* Say.

Two characteristic and beautiful Anodons, found in a lake near the mouth of Spoon river. The *A. suborbiculata* Say, is a fine yellow, waxy looking shell, and does not seem to be in any way related to any other Anodon.

I also found in this lake a variety of *U. anodontooides* but half the size of those found in Spoon river, and differing from it somewhat in shape.